

Description

For the electronic measurement of currents: DC, AC, pulsed, mixed, with a galvanic isolation between the primary circuit and the secondary circuit.

Features

- ◆ Open loop transducer using the Hall effect
- ◆ Low voltage application
- ◆ Unipolar +5VDC power supply
- ◆ Operating temperature range:
-40°C T_A <math><+125^\circ\text{C}</math>
- ◆ Output voltage: fully ratio-metric(gain and offset)



$I_{PN} = 200 \dots 900\text{A}$

Advantages

- ◆ High accuracy
- ◆ Excellent linearity
- ◆ Low temperature drift
- ◆ Hermetic package

Industrial applications

- ◆ Standard battery monitoring
- ◆ Hybrid and EV battery pack current sensing
- ◆ Fuel cell current control
- ◆ DC/DC converters and AC/DC inverters
- ◆ Hybrid and EV motor inverter drive
- ◆ EPS and X-by-wire applications
- ◆ Electric compressors for air conditioning

TYPES OF PRODUCTS		
Type	Primary nominal current I_{PN} (A)	Primary current measuring range I_P (A)
BST1-200IOV1HB	200	±200
BST1-300IOV1HB	300	±300
BST1-400IOV1HB	400	±400
BST1-500IOV1HB	500	±500
BST1-600IOV1HB	600	±600
BST1-700IOV1HB	700	±700
BST1-800IOV1HB	800	±800
BST1-900IOV1HB	900	±900



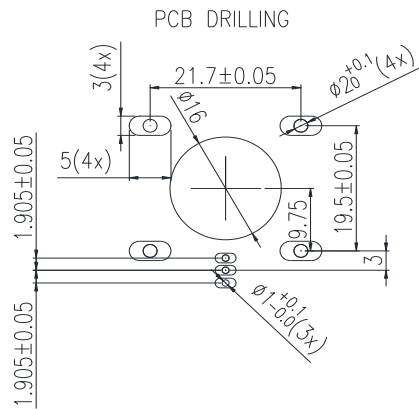
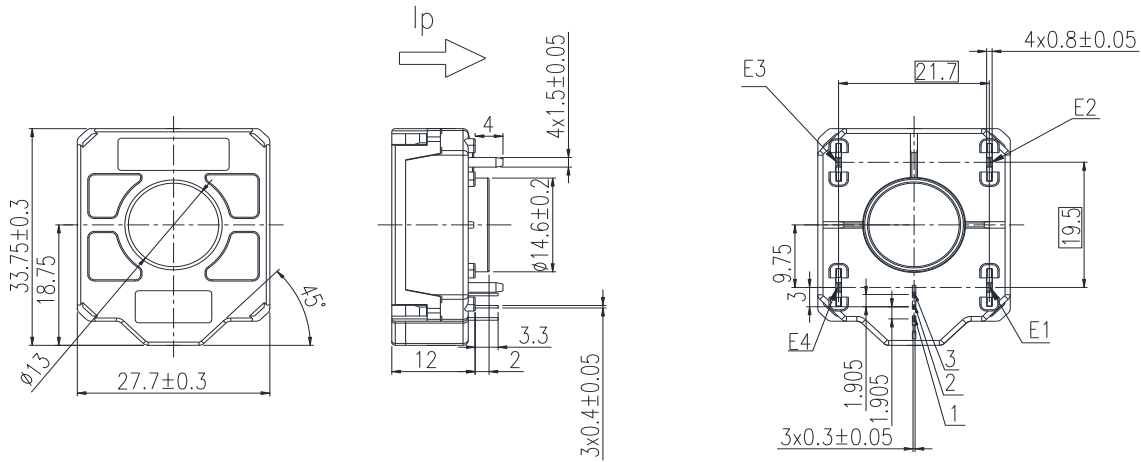
Parameters Table

PARAMETERS	SYMBOL	UNIT	VALUE			CONDITIONS
			Min.	Typ.	Max.	
Electrical data						
Supply voltage	V _c	V	4.75	5	5.25	
Current consumption	I _{cc}	mA	9.5	-	16	@T _A = 25°C
Output Load Capacitance	C _L	nF	-	2.2	-	@V _{OUT} to GND
Output voltage	V _{OUT}	V	V _c / 5 × (2.5 + 2 / I _{pn} × I _p)			@T _A = 25°C V _c = 5V
Output Linearity	ε _L	%	-1%	-	+1%	@T _A = 25°C
Accuracy	X	%	-1%	-	+1%	@T _A = 25°C
Quiescent Output Voltage ⁽¹⁾	V _{OUTQ}	V	2.5V ± 15mV			@T _A = 25°C B=0
Performance data						
Magnetic Sensitivity	Sens	mV/G	0.5	-	4	@T _A = 25°C
Output Bandwidth	BW	kHz	-	50	-	@-3dB
Response time	t _r	μS	-	-	8	
Rms voltage isolation test	V _d	kV	-	-	2	@AC 50Hz 1Min
General data						
Ambient operating temperature	T _A	°C	-40 ~ +125			
Ambient storage temperature	T _S	°C	-40 ~ +125			

Notes:

- (1) The indicated offset voltage is the one after the core hysteresis is removed.

Dimensions BST1-IOV1HB(in mm. 1 mm = 0.0394 inch)



Pins definition

Terminals	Designations
1	Vout
2	GND
3	supply voltage +5VDC
E1 to E4	GND(*)

(*)Only 1 of these 4 pins could be connected

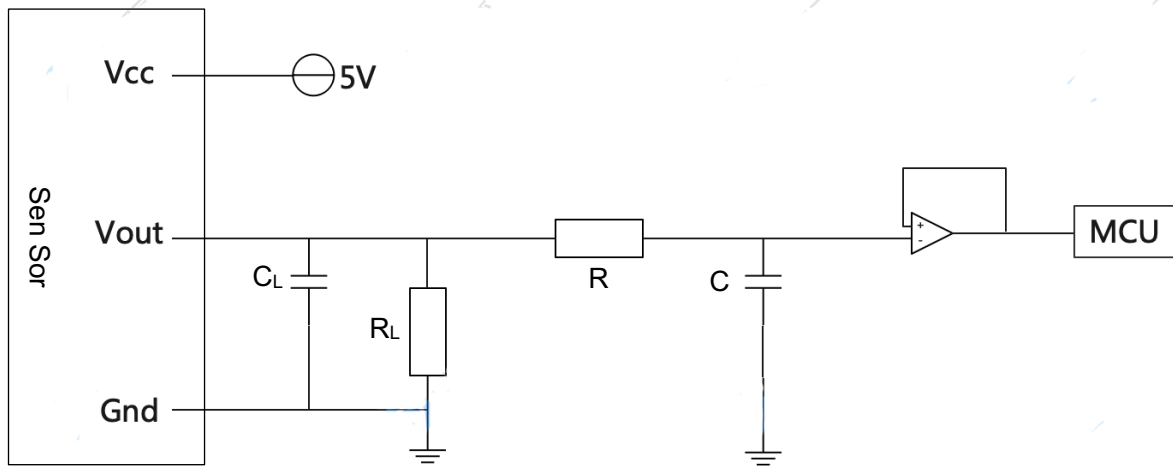
General Tolerance: $\pm 0.3\text{mm}$



◆ **Instructions of use**

1. When the test current passes through the sensors you can get the size of the output voltage.
(Warning: wrong connection may lead to sensors damage.)
2. Based on user needs, the sensors output range can be appropriately regulated.
3. According to user needs, different rated input currents and output voltages of the sensors can be customized.

System architecture (example)



$C_L < 2.2 \text{ nF}$ EMC protection (optional)
RC Low pass filter (optional)

On board diagnostic

$R_L > 10\text{k}\Omega$. Resistor for signal line diagnostic (optional)

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